NOTICE OF ALLOWANCE

This action is in response to papers filed September 28, 2009, November 2, 2009 and January 8, 2010.

Applicant has filed Request for Continued Examination after Notice Of Allowance was mailed on August 11, 2009. Claims were amended to replace "half" wavelength to the order of wavelength. Applicant has also added two new claims with incorrect numbers. With the Applicant's approval to correspond via e-mail, proposed claim amendments which would place claims in condition for allowance were sent to the Applicant on January 6, 2010. Applicant accepted the proposed amended claims and authorized to cancel any claims if needed via e-mail on January 7, 2010. All electronic correspondence between the Examiner and the Applicant are attached to this action and made of record.

Claim Status

New claims incorrectly numbered as 2 and 9 have been renumbered as claims 21 and 22. Claim 1 has been amended to include the limitation of claim 21. Claim 21 has been cancelled. Claims 1, 4, 5, 6, 8, 10-15 and 22 are allowed. Claim 22 is cancelled.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee. Claims 1, 4-6, 8, 10-15 and 22 have been renumbered Claims 1-12 according to 37 C.F.R. 1.126 (see MPEP 608.01 (j) and 608.01 (n) IV).

Examiner's amendments were authorized by the Applicant on January 7, 2010. The application has been amended as follows:

Specification New Matter

The amendment filed November 2, 2009 is objected under 35 U.S.C. 132(a) because it introduces new matter into the specification. Applicant has cancelled the new matter via e-mail on January 7, 2010 and therefore new matter objection/rejection is moot.

In the claims: Cancel claim 21.

Claims have been written as follows:

1. (Currently amended) A monolithically integrated biochip for testing biological substances comprising a plurality of binding sites, optical means for determining a specific binding event at each binding site, wherein the plurality of binding sites are monolithically integrated by processing one substrate with the optical means for determining a specific binding event which comprise at least one microcavity light source, at least one photodetector and at least one planar waveguide, an evanescent field of light propagating in the waveguide interacting with the biological substance

under test, and wherein the ~~dimensions of the~~ microcavity light source ~~are in the order of half-wavelength of light to be emitted~~ is a photonic band gap microcavity light source.

2-3. (Cancelled).

4. (Original) A biochip in accordance with claim 1 wherein either or both the light sources and the photodetectors are implemented in a thin film semiconductor layer.

5. (Original) A biochip in accordance with claim 4 wherein the light sources and photodetectors are implemented in the same semiconductor thin film layer.

6. (Original) A biochip in accordance with claim 4 wherein the semiconductor thin film material comprises semiconductor polymer.

7. (Cancelled).

8. (Original) A biochip in accordance with claim 4 wherein the ~~thin film~~ photodetector is a microcavity photodetector.

9. (Cancelled).

10. (Previously amended) A biochip in accordance with claim 1 wherein the means for determining a binding event at each site comprise means for determining a refractive index change associated with a binding event.

11. (Original) A biochip in accordance with claim 10 wherein the means for determining refractive index change comprise a first planar waveguide on surface of which the binding event occurs, a second planar waveguide located below the first waveguide and separated by coupling layer of lower refractive index than that of the two waveguides.

12. (Original) A biochip in accordance with claim 10 wherein the means for determining refractive index change comprise a first planar waveguide on surface of which the

binding event occurs, a grating formed in said waveguide, a second planar waveguide located below the first waveguide and separated by coupling layer of lower refractive index than that of the two waveguides.

13. (Previously amended) A biochip in accordance with claim 1 wherein the means for determining a binding event further comprise a reference light paths provided at each binding site for error correction.

14. (Currently amended) A biochip in accordance with claim 1 wherein the biochip further comprises a ~~further~~ plurality of electrodes to control hybridization conditions at each binding site.

15. (Original) A biochip in accordance with claim 14 wherein the electrodes comprise resistive heater electrodes formed underneath individual binding sites or groups of biding sites.

16-21. (Cancelled).

22. (New) A biochip in accordance with claim 8 wherein the microcavity photodetector is a photonic band gap microcavity photodetector.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Additional prior art considered: Sugita (USPN 7,430,039 effective filing date Apr. 22, 2004).

Sugita et al teaches photonic band microcavity light source 702 integrated on a substrate and photodetectors are placed on the surface of the substrate (Fig. 7 and

Example 5 and column 6, lines 25-38). Sugita does not suggest or obviate a plurality of binding sites monolithically integrated with the light source and a photodetector and a waveguide as claimed.

None of the references of the record either teach or suggest or obviate a plurality of binding sites monolithically integrated with a photonic band gap microcavity light source and a photodetector and a waveguide as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Claims 1, 4, 5, 6, 8, 10-15 and 22 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Narayan K. Bhat whose telephone number is (571)-272-5540. The examiner can normally be reached on 8.30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nguyen can be reached on (571)-272-0731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Narayan K. Bhat/

Examiner, Art Unit 1634

/BJ Forman/

Primary Examiner, Art Unit 1634